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THE PLANT DISEASE REPORTER

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THE OFFICE OF MYCOLOGY AND DISEASE SURVEY

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THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

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STATE SURVEYS STRENGTHENED

Readers of this Reporter may have noticed that there have been more reports from Utah and Iowa than usual this year. This is largely due to the fact that special attention is being given survey work in those states. In Iowa, Dr. W. A. Archer of this office is giving his entire time to pathological and mycological surveys in cooperation with the Department of Botany and Plant Pathology of the College of Agriculture. In Utah, Dr. M. B. Linford has been employed for the summer months to make a survey of plant disease conditions. The expense of the work in both of these states is shared equally by the Plant Disease Survey and the Agricultural Colleges. It is hoped that if the work proves valuable that it may gradually be extended to other states. (R. J. Haskell)

OFFICIAL RECORD CARRIES SURVEY ITEMS

You may have noted that a new section of the Official Record of the Department of Agriculture is now being devoted to survey notes under the caption "Plant Disease Survey of the United States". The items included are telegraphic in style to conserve space. They are all based on more extensive notes published in this Reporter. Readers will therefore find no information in the Record that is not covered, usually in more detail, in the Reporter. The object of this new service is to bring the more important plant disease information to the attention of a wider class of agricultural readers in the hope that it will be useful to them and that it will encourage the sending of more survey data and specimens to

collaborators and to the Washington office.

If you have any suggestions or comments concerning this news service, whether favorable, neutral or unfavorable, please send them in. We would like some advice as to whether or not this proposition is worth while.

The Official Record is sent free to all persons who are on the rolls of the Department of Agriculture. Collaborators and cooperators are entitled to it. The subscription price to others is 50 cents a year domestic, $1.10 foreign.

(R. J. Haskell)

MUSKMELON AND CUCUMBER DISEASES IN NEW YORK

By Charles Chupp (August 1927)

Because of the exceptionally unfavorable weather, and because of the presence of disease, the cucumber and melon crops are a total loss on many farms. A large number of fields are being plowed under before harvest time. On account of the many complaints received from growers, a survey was made of conditions in Ontario, Monroe, Wayne, Oswego, Onondaga and Albany Counties. Approximately forty farm visits were made and fifty fields inspected. The alternating of dry, hot weather and of cold, wet weather, with hail in some communities resulted in extremely poor growth of vines, in delayed maturing, and in mechanical injury to the vines and leaves.

In addition to the ill effects of the weather, the different fields showed the results of Macrosporium blight, angular leaf spot, bacterial wilt, and mosaic. The last named seems to be on the increase and if it continues to spread will hinder the growing of muskmelons and cucumber in the up-state districts. It now is present on both crops in amounts varying from a trace to 100 per cent. No fields were found wholly free. The loss from this disease averages approximately 10 per cent.

An effort was made to determine the weed hosts which acted most often as winter carriers and to see if it were practicable to eradicate these for a safe distance about the fields. In Monroe County the most common carrier seemed to be catnip, and several fields were found where apparently the disease spread from a definite clump of this weed, which showed mottling. In other counties the weed host was almost wholly milkweed, which is fairly common, and in many fields almost impossible to eradicate unless a community project is undertaken.

The Macrosporium leaf spot was present to a slight extent in about 75 per cent of the fields but was much more common in Albany, Onondaga and Oswego Counties than in those farther west. In three melon fields in Albany County, half or more of the foliage had been killed by this leaf spot, and probably all of the foliage will be destroyed before many melons can be harvested. The average loss for all the counties is approximately 3 per cent.

The angular leaf spot (Bacterium lachrymans) is very serious in many fields in Monroe and Wayne Counties. It, however, does not seem to be present farther east. Seed treatment with corrosive sublimate is not enough to control the disease, but where the men treated, and also sprayed or dusted, the fields are relatively clean. In these two Counties the amount of disease varies from a trace to 100 per cent infection, with approximately 20 per cent total loss.

Bacterial wilt (Bacillus tracheiphilus) is common and serious in all the counties. Only two or three fields were observed where it was not present. The remainder of the fields showed from a trace to 20 per cent of killing in extreme cases. The average loss is 7 to 10 per cent. Where spraying or dusting was done carefully, beginning as soon as the plants came up, the wilt was held in check.

On one farm in Albany County, where melons had been grown for many years, there was a disease which had the symptoms of the Fusarium wilt. This was not determined definitely.

On the University Farm at Ithaca, variety tests of cucumbers, muskmelons, and watermelons were planted, and nearly all varieties showed severe infection from powdery mildew (Erysiphe sp.) Some of the muskmelon varieties were killed, while others were severely injured. The cucumbers were not affected quite so badly. The watermelons showed the mildew only on the fruit, but not on the leaves. Affected fruit were photographed. It is hoped to get some information on the relative susceptibility of the varieties as soon as the varietal names are procured.

ANGULAR LEAF SPOT (BACTERIUM LACHRYMANS) ON CUCUMBER IN UTAH

"This disease is now reported for the first time from this state, as far as known. It was found in a small market garden in Piute County where it was causing complete failure of the cucumber crop. Practically all of the leaves were infected, and the young fruits, becoming infected early, dropped from the vine before attaining usable size." (M. B. Linford, Sept. 7)

DOWNY MILDEW ON CUCURBITS

The following note has been received from I. T. Scott of Missouri, September 1. The occurrence of downy mildew on watermelon is apparently less frequent than on cucumbers and muskmelons. The Survey has reports, however, of serious damage to this crop from Delaware, Louisiana, and California, in other years. This seems to be the first authentic report of this disease from Missouri.

"Both watermelon and cucumber have been found affected with this disease in Scott County by County Agent Renner. Specimens have been received and the causal organism identified. All of the watermelon plants in a 20-acre field are reported to be dead and dying as a result of the mildew. Leaves are completely covered with the fungus on every plant. It is less severe on the

cucumber planting observed. It is possible that other fields are affected but that the disease has been overlooked because of little damage."

V. H. Young reports its occurrence on cantaloupe in Arkansas as follows (September 15):

"Probably scattered over state and causing considerable injury. Appears to have been favored by cool wet summer."

REPORTS ON DISEASES OF CUCURBITS

Fusarium wilt. "At the present time the loss to watermelons in Muscatine County, Iowa, is considered to be 25 per cent." (Archer, Aug. 24). "As you probably know a large percentage of the cantaloupe fields in the Mesilla Valley, New Mexico, were destroyed by fusarial wilt. Some of the fields around Vinton, Texas were a total loss due to this disease." (Crawford, Aug. 22). "Common on watermelons over southern and central parts of Arkansas." (V. H. Young, Sept. 15).

Bacterial wilt (Bacillus tracheiphilus) on muskmelon and cucumber in Ohio. "As many as 20 per cent of plants killed in many fields in northern Ohio." (J. D. Wilson, Sept. 1).

Mosaic. "In Iowa mosaic has occurred on some of the watermelon-citron hybrids, but has not been observed on watermelon." (Archer, Aug. 20).

Watermelon anthracnose (Colletotrichum lagenarium). Rather common in Arkansas this year." (V. H. Young, Sept. 15).

Macrosporium cucumerinum. Very common and destructive in Arkansas. Cantaloupe foliage injured much more this season than usually." (V. H. Young, Sept. 15)

Diplodia sp. (?), stem-end rot of watermelon, in Arkansas. "Reported as causing considerable loss in a few cases." (V. H. Young, Sept. 15).

FUSARIUM WILT OF TOMATOES
NOTES ON VARIETAL RESISTANCE AT CLEMSON COLLEGE, SOUTH CAROLINA
By C. A. Ludwig (September 1)

The Horticulture Division of this institution is conducting a series of tests of tomato varieties and of sources of seed of the different varieties. As the suitable soil available is limited it has been necessary to follow tomatoes with tomatoes to some extent. Fungous wilt has been observed creeping in for a few years. Counts were made of affected plants on August 12. The test lots of plants consist of eight plants each and are replicated for the purposes of the counts according to the number of different firms from which seed were bought. Dead plants were considered as wilted and doubtful cases were decided by cutting across the stem and noting the appearance of the vascular tissues. There is no

assurance that the soil is evenly infested with the fungus, but the results would seem to indicate that there is not a great deal of variation. The following varieties, as an average of at least four lots, show infection as indicated:

Trucker's Favorite---	92.5%	John Baer----------	73.4%
Greater Baltimore----	89.6%	Trophy-------------	71.9%
Earliana-----------	89.1%	Livingston's Globe---	56.9%
Bonny Best----------	83.7%	Stone--------------	55.0%
Gulf States Market---	80.0%		

The varieties showing the highest percentages of disease had many dead plants and were very noticeably less vigorous than the others. Those with the smaller amounts were noticeably more thrifty and green, approaching the resistant varieties in this regard. This was especially true of Livingston's Globe and Stone.

The following resistant varieties (one plot only of each) showed some wilt - Marglobe, Norton, Duke of York, Columbia, Marvana, Marvelosa, Marglobe, and Louisiana Red (doubtful). The diagnosis was not verified with these varieties by cutting across the stem, as it was desired to continue yield records on them. Louisiana Pink and Marvel were apparently free from the disease. The average of disease in these resistant varieties, which, of course, must be considered as a rough approximation only, was 25 per cent.

No wilt was observed in Mikado and Santa Rose, one lot of plants each.

BACTERIAL CANKER OF TOMATO

Another state has been added to those in which bacterial canker (Aplanobacter michiganense) is known to occur. Miss Mary K. Bryan has received diseased specimens from a tomato grower in Montana, who reports a 25 per cent loss in an 8-acre field. The plants came from Utah.

OTHER REPORTS ON TOMATO DISEASES

Mosaic in Missouri. "For the first time in recent years our attention has been called to serious outbreaks of mosaic in tomato plantings in this state. Most of the damage seems to be confined to the southwestern part of the state, largely in and near the rather extensive canning districts. Typical mosaiced foliage is evident in a number of fields while the filiform-leaf or string-leaf appears to be the most abundant form of injury. Yields are markedly curtailed on all mosaiced fields." (Scott, Sept. 1)

Septoria leaf spot in Iowa. "Early varieties of tomato in Muscatine County are severely attacked. Late varieties are not yet showing infection. One field of Earliana was entirely defoliated after most of the fruit had ripened." (Archer, Aug. 24)

LATE BLIGHT OF POTATO

Reports of late blight and rot of potato have been received from West Virginia, New York, New England, Pennsylvania, Maryland, and Wisconsin. In southeastern New England, W. Doran first observed it on leaves August 10. By August 17, the foliage in many fields was killed. Recent advice from that section indicates that there is considerable rot in the tubers that are being harvested. In New York it was first observed, as usual, on Long Island early in July, and a few weeks later was reported by Barrus from upstate potato sections. At the higher altitudes in western Pennsylvania and Maryland, badly affected fields were observed by R. J. Haskell, August 20. In Wisconsin, R. E. Vaughan reported on August 15 that there was a slight outbreak in the Oneida, Forest, and Langlade County sections, but it was much less prevalent than last year. Dry weather and Bordeaux spraying tended to check it.

WISCONSIN TOBACCO DISEASE SITUATION

By James Johnson (September 1)

Damping off due to Pythium and Rhizoctonia was fairly common in the seed beds in spring during period of wet weather. Seed beds were unusually poor this season. The cause of most of the failures may have been associated with insect injury, however.

Black root rot (Thielavia basicola) occurs commonly, but damage this season was largely obscured by extreme drought. The relatively cool weather has been favorable.

Brown root rot, cause uncertain, follows as a result of growing tobacco after certain other crops, particularly sod. It is commonly present on sod, and therefore on a large percentage of the tobacco fields, resulting in a stunted growth. It was partly obscured this season by drought.

Mosaic is very common. It probably occurs to some extent in most tobacco fields. The actual damage is difficult to estimate. Up to 25 and 50 per cent of the plants are affected in some fields. In such cases the value of the crop may be reduced from 12 to 25 per cent, considering both effect on yield and quality.

Wildfire (Bacterium tabacum) is known to occur on only about a dozen farms. It appeared to be serious in a few cases early in the season, but following continued dry weather it has practically disappeared from fields.

Black fire (Bacterium angulatum) was noted in a few fields, no serious damage. Dry weather was unfavorable for its occurrence.

Frenching, cause unknown, was noted on a few plants in one field only. It is apparently more common in wet seasons.

PHOMA ANETHI ON DILL

By W. A. Whitney

Specimens of diseased dill (Anethum graveolens Linn.) sent in by M. B. Porch from Muscatine, Iowa, on September 5, 1927, were heavily infected with a fungus which was identified as Phoma anethi (Pers.) Sacc. The diagnosis was verified by W. W. Diehl. These specimens have been deposited in the Mycological Collections of the Bureau of Plant Industry.

This parasite has been recognized in Europe for many years. The only other report from the United States in the Plant Disease Survey files is by H. S. Jackson, who reported this disease as abundant in Plymouth (Marshall County), Indiana, in 1915.

The fungus has a well developed stromatic layer not characteristic of the genus Phoma and its actual taxonomic position is, therefore, indeterminate until more is learned of its development and life history.

CURLY-TOP OF SUGAR BEET

New Mexico: Curly top of sugar beets is always very severe in New Mexico. This year the disease seems more prevalent than ever. (Crawford, July 21)

Utah: This disease is proving much more severe this year than early season forecasts indicated. Many fields throughout the state are suffering losses of 50 to 100 per cent of the crop. (Linford, Aug. 23)

CHERRY LEAF SPOT

Ontario, Canada: Shot-hole fungus is again appearing in cherry orchards. The trouble had appeared to have stopped with the falling of the leaves but more leaves are yellowing and dropping. One young sweet cherry orchard of 30 trees has been completely defoliated. (G. C. Chamberlain, New York State Col. Agr. Week. News Letter, Aug. 15)

Iowa: Yellows is generally prevalent especially in the southern part of the state and infection is evidently more severe than usual. Trees receiving regular spray schedule are practically free from infection. In one orchard the last spray was omitted on a number of trees and on these there was severe infection of terminal growth. (Archer, Aug. 24)

QUINCE LEAF SPOT IN SOUTH CAROLINA

"Severe, leading to partial defoliation, on a few trees in station orchard. This is severe nearly every year on these trees. Last year is the only year since I have had these trees under observation when the attack was light." (Ludwig, Aug. 15)

POWDERY MILDEW OF GOOSEBERRY IN UTAH

"One grower at Castle Dale in Emery County has lost his entire crop of one variety, said to be the "Columbus", from this disease for three consecutive years. Other varieties are not affected. A dormant spray with lime sulfur followed by a single spray with Bordeaux following blossoming did not control the disease this year." (Linford, Aug. 23)